

File 95



84th Annual Report 1964

NEW YORK AND HONDURAS ROSARIO MINING COMPANY

NEW YORK AND HONDURAS ROSARIO MINING COMPANY

DIRECTORS

SAMUEL R. MILBANK, *Chairman*

JULIAN B. BEATY, SR.

ALLAN HOOVER

DR. J. RALPH JACOBY

HERBERT A. KAUFMANN

LLOYD M. McMILLEN

ROBERT M. REININGER

GEORGE W. TOWER

RICHARD H. VALENTINE

OFFICERS

ROBERT M. REININGER, *President*

SAMUEL R. MILBANK, *Chairman of the Board of Directors*

HOMER S. ANDERSON, *Vice President, Engineering*

WILLIAM P. MORRIS, *Vice President, Mining*

DAVID L. MOORE, *Vice President, Exploration*

EDWARD L. VICKERS, *Treasurer*

GERALD E. McDANIEL, *Secretary*

JULIAN B. BEATY, SR., *Assistant Secretary*

Executive Office

20 Exchange Place, New York, New York 10005

Mine Office

Apartado Postal 502, San Pedro Sula, Honduras, C. A.

Exploration Offices

405 McCarty Building, Boise, Idaho

317 Korber Building, Albuquerque, New Mexico

Balderas 32—Despacho 205, Mexico 1, D. F., Mexico

620 Cathcart Street, Montreal, P. Q., Canada

Transfer Agent

CHEMICAL BANK NEW YORK TRUST CO., NEW YORK, N. Y.

Registrar

IRVING TRUST COMPANY, NEW YORK, N. Y.

Auditors

ERNST & ERNST, NEW YORK, N. Y.

General Counsel

REEVES, TODD, ELY & BEATY, NEW YORK, N. Y.



Our cover design depicts the ancient alchemists' symbol for the noble metal silver. For centuries alchemists of old schemed and labored in attempts to expand production of silver the easy way—by transmutation. Today Rosario is expanding production of silver the hard way—by planning, exploration, engineering, and metallurgy.

PRESIDENT'S REPORT



Robert M. Reininger

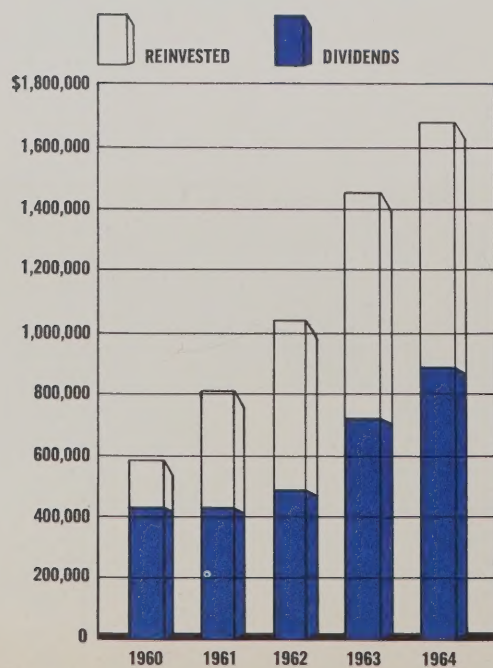
To the Stockholders of
New York and Honduras Rosario Mining Company:

The year 1964, our eighty-fourth year of operations, recorded a continuation of financial progress for your Company, both in mining and in oil and gas activities. Strong demand for our production of silver, gold, lead, zinc, and cadmium prevailed throughout the year.

Net income for 1964 was \$1,682,392 or \$1.57 per share on the basis of 1,073,004 shares, which includes the 3 per cent stock dividend paid January 22, 1965. The earnings represented a gain of 15.7 per cent over the net income of \$1,453,575 or \$1.35 per share on the same basis for 1963. A profit of \$120,517 was realized from sales of securities in 1964 as compared with \$62,850 in 1963.

Cash dividends declared for the year 1964 were 85 cents per share, compared with 70½ cents per share in 1963, based on shares outstanding at the end of 1964. In addition, stock dividends of 3 and 4 per cent respectively were declared in these years.

NET EARNINGS AND DISPOSITION



Silver Bullion



EL MOCHITO MINE (Honduras)

Increased production of ore mined and milled was achieved for the tenth consecutive year. Capital equipment additions, increased operating efficiency, and metallurgical improvements substantially offset higher labor and supply costs and increased taxes.

The exploration and development program was increased to provide for planned further increases in production. Ore reserves were maintained, with new ore developed approximately equalling ore mined.

A major expansion program for El Mochito Mine was commenced in 1964. This is a three-stage program for increasing production and will be completed over a 2½-year period. Phase I of the mine and mill expansion was completed in December with the installation of a new skip hoisting system and the installation of the fourth ball mill in the concentrator. This resulted in a milling capacity of 500 tons per day as compared with the 400 tons per day in 1964. Phase II, covering major mine equipment additions, is scheduled for completion in July 1965. Phase III, scheduled for completion in the third quarter of 1966, covers capital equipment additions that will further increase mill capacity to 750 tons per day. Lower unit costs associated with this added capacity will make possible profitable treatment of additional ore that was previously considered marginal grade.

The expansion plans for the year 1965 include a \$949,000 capital equipment program. The mine is scheduled to produce 170,000 tons of ore during the year, an increase of 22.7 per cent over last year's production.

The report of Mr. William P. Morris, Vice President, Mining, on your Company's operations, set forth on pages 12 to 19, contains essential details about the progress of El Mochito Mine.

GAS AND OIL ACTIVITIES

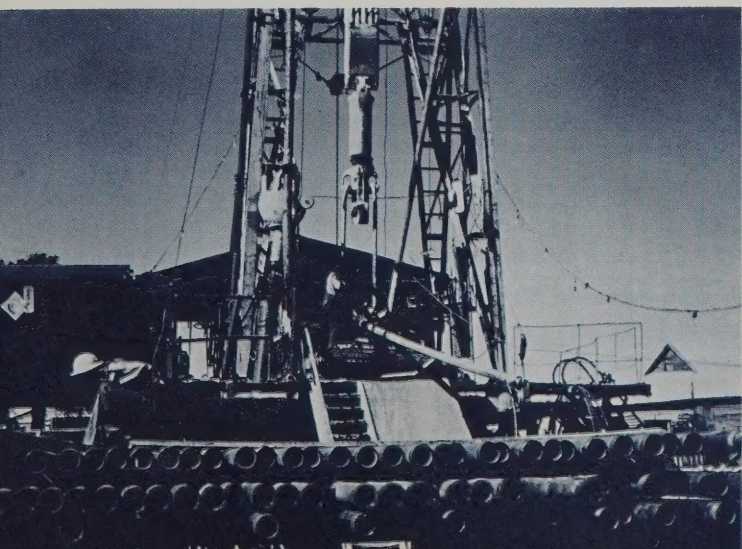
Alamo Petroleum Company
and
Rosario Production Company

Our subsidiaries' gas and oil activities in 1964 showed a marked increase in income. Revenues from production and royalties reached \$729,721, and the gain on small producing leases bought and sold amounted to \$86,386. Total gas and oil income in 1964 was \$816,107, compared with the 1963 figure of \$457,877 which resulted after repayment of \$292,864 of previous production payments. Expenses, including intangible drilling costs during the year, amounted to \$371,420, against \$245,709 the previous year.

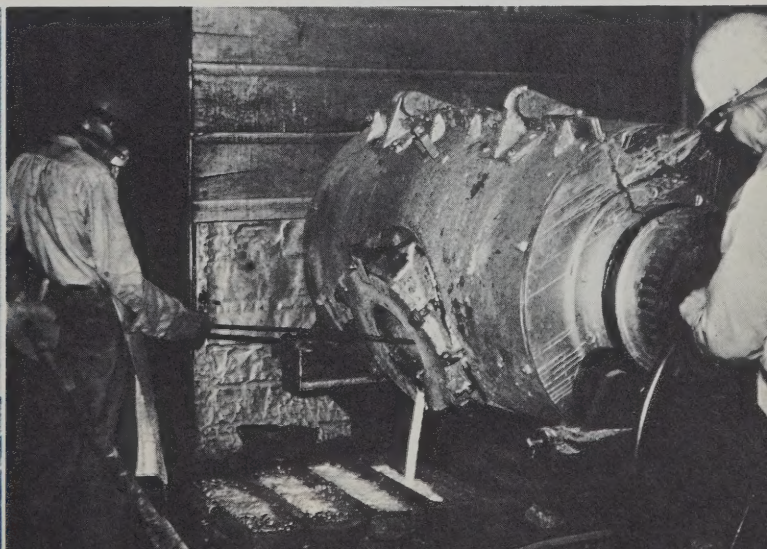
The Rosario Production Company operations in the Henderson Field of Rusk County, Texas, were again the major source of our domestic revenue. The year 1964 was the first year that the income from this field was not reduced by production payments.

Participation in exploration and development drilling projects, in which we have varying interests, resulted in ten producing gas and oil wells.

Completing Rosario Production Company Well—Rusk County, Texas



Pouring Silver Bullion





Geologist Wedemeier Prospecting in Honduras

OTHER MINING INTERESTS

Neptune Gold Mining Company (Nicaragua)

Your Company owns 33.2 per cent of Neptune Gold Mining Company. Production in 1964 amounted to 281,800 tons of ore, 79,333 ounces of gold, and 99,900 ounces of silver. Earnings in 1964 were \$207,634, compared with \$250,492 earned in 1963. During 1964 dividends were lower due to settlement of pending tax claims and increased development. Five dollars per share was paid, representing a revenue to Rosario of \$33,205, compared with \$16 per share and a revenue of \$106,256 in 1963. New ore developed was approximately equal to the tonnage mined during the year.

Campbell Chibougamau Mines Ltd. (Canada)

Your Company's interest in this copper-gold producer in the Chibougamau district of Quebec remained at 100,000 shares. Earnings of Campbell for the fiscal year ended June 30, 1964, amounted to 16 cents per share, compared with 30 cents per share the previous year.

Compañía Minera Los Andes, S. A. (Chile)

During 1964 operations of the Mantos de la Luna oxide copper deposit in Northern Chile showed a slight profit. A leasing contract with Wells Cobre Ltd. was completed in October 1964. This lease calls for royalty payments by Wells in addition to an increase in the milling rate which is expected to improve the over-all profitability of the operation.

Rosario Exploration Company holds approximately 15 per cent of the stock and \$95,000 of the notes and debentures of the Los Andes Company which originally financed the operation.

EXPLORATION ACTIVITIES

Rosario Exploration Company and

Rosario Mining Explorations Ltd. (Canada)

The year 1964 witnessed a substantial increase in your Company's mineral exploration activities. Further increase is planned for 1965. The principal emphasis continues to be directed toward silver and base metal exploration.

The Bruneau Mines Ltd. copper-gold property in the Chibougamau area of Quebec was acquired under a 99-year lease by Rosario Exploration Company. A 2,000 foot tunnel was started in December to further explore and develop the "B" ore body and other favorable showings encountered in our previous diamond drilling work. The previous work indicated reserves sufficient to support a production rate of about 200 tons per day; the ore grading approximately 2.5 per cent copper, .018 ounces gold, and 1 ounce silver. Initial production rate and the method of treatment will be determined by additional reserves revealed by the exploration and development program to follow completion of the tunnel.

The Huautla Mine, a small high-grade silver property in Morelos, Mexico, in which we hold approximately one-half interest, shows promise of justifying a milling operation of 50 to 75 tons per day. An exploration and development program is in progress to determine the economics of the property.

Exploration activity in Central America, a prime target from our operating base at Mochito, has been expanded. A long-range program of geologic mapping and geophysics in Central America, with particular emphasis in Honduras, was commenced to explore remote areas of limited geologic information.

Several mining claims have been acquired in Arizona, New Mexico, and Utah for exploration by diamond drilling and geophysical methods. Some joint venture projects are being undertaken to provide wider exploration opportunities.

ORGANIZATION CHANGES

With extreme regret I record the passing of Lewis Latham Clarke on July 4, 1964. Mr. Clarke served your Company with distinction since 1903 as a Director and as Chairman of the Board of Directors.

Mr. Samuel R. Milbank, a Director since 1957, was elected Chairman of the Board of Directors on April 15, 1964. Mr. Milbank, a Partner of Wood, Struthers and Winthrop, brings to this position wide experience in finance and mineral industry matters.

Mr. George W. Tower, Consulting Mining Engineer and Geologist, was elected a Director on March 10, 1965. Mr. Tower brings to the Board extensive experience in the field of international mining and exploration.

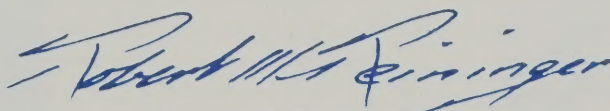
OUTLOOK

The outlook for 1965 is good. Our plans call for continued increases in production and earnings, based on the present price of \$1.293 per troy ounce of silver, our principal product. This price limitation results from the continuing practice of the United States Government to sell silver at that price from its declining stocks. The widely-heralded coin shortage has reached a critical stage. A Government decision can not long be deferred. We believe the present 90 per cent silver content in coins should be reduced, but not eliminated. Whatever position the Government takes on silver coinage, the Treasury probably will continue for a time to meet the excess demand for silver by maintaining sales between \$1.29 and \$1.38 an ounce in order to minimize withdrawal of coins from circulation. With the eventual diminishing of Government silver stocks to a minimum defense level, the price of silver will ultimately rise to justify increased silver production capable of meeting the growing industrial demand.

Your Company is one of the principal primary silver producers in the world, with 1964 production equal to approximately 9 per cent of the year's silver production of the United States and 10 per cent of that of Canada. Silver will continue to be the prime target of our expanding production and exploration activities.

On behalf of the Board of Directors, I extend our thanks to our Rosario shareholders for their fine support. To all the capable people of the Rosario organization who have responded so splendidly to the increased demands of our expanding work, I extend deep appreciation. Their individual capabilities and excellent teamwork made possible the accomplishments of the past year and the encouraging outlook for the future.

Respectfully submitted,



ROBERT M. REININGER
President

March 23, 1965

Exploration Project Manager E. Knight with Diamond
Drill Foreman Gonzalez — Huautla Mine



CONSOLIDATED

ASSETS

	December 31	
	<u>1964</u>	<u>1963</u>
CURRENT ASSETS		
Cash, including time deposits	\$2,001,235	\$1,570,168
Bullion and concentrates—at net realizable amount	1,179,598	1,271,508
Marketable securities—at cost and accrued interest (quoted market—1964, \$1,245,692; 1963, \$1,271,760)	851,332	866,967
Materials and supplies—at average cost	948,566	970,021
Prepaid expenses	37,069	51,581
TOTAL CURRENT ASSETS	<u>5,017,800</u>	<u>4,730,245</u>
INVESTMENTS AND OTHER ASSETS		
Oil and gas ventures—at cost, less allowances	921,541	659,543
Neptune Gold Mining Company, 33.2% owned—at cost	62,647	62,647
Other mining ventures—at cost, less allowances	387,365	245,602
Other assets	199,136	91,062
	<u>1,570,689</u>	<u>1,058,854</u>
MINING PROPERTY, PLANT, AND EQUIPMENT		
At cost	4,957,242	4,249,942
Less allowances for depreciation	2,692,735	2,434,785
	<u>2,264,507</u>	<u>1,815,157</u>
	<u>\$8,852,996</u>	<u>\$7,604,256</u>

See notes to financial statements.

ROSARIO MINING COMPANY

Subsidiaries

BALANCE SHEET

LIABILITIES

	December 31	
	<u>1964</u>	<u>1963</u>
CURRENT LIABILITIES		
Accounts payable	\$ 247,753	\$ 150,537
Accrued expenses	435,180	420,198
Honduras and United States income taxes	1,042,701	740,000
TOTAL CURRENT LIABILITIES	<u>1,725,634</u>	<u>1,310,735</u>
STOCKHOLDERS' EQUITY		
Capital Stock, par value \$1.00 per share, authorized 2,000,000 shares, issued 1,084,004* shares in 1964 and 1,053,342* shares in 1963, less 11,000 and 15,809 shares respectively held in treasury—Note A	1,073,004*	1,037,533*
Capital surplus—Note B	3,030,121	2,295,430
Retained earnings	3,024,237	2,960,558
	<u>7,127,362</u>	<u>6,293,521</u>
	<u><u>\$8,852,996</u></u>	<u><u>\$7,604,256</u></u>

*Including shares issued as stock dividends paid the following January.

NEW YORK AND HONDURAS ROSARIO MINING COMPANY
and Subsidiaries

STATEMENT OF CONSOLIDATED INCOME

	Year ended December 31	
	1964	1963
INCOME		
Income from production of bullion and concentrates	\$6,983,376	\$6,369,326
Less freight, smelting, and refining costs	1,741,037	1,771,609
	<u>5,242,339</u>	<u>4,597,717</u>
Income from oil and gas ventures	816,107	457,877
Investment income	209,938	229,597
Sundry	55,872	34,065
	<u>6,324,256</u>	<u>5,319,256</u>
COSTS AND EXPENSES		
Mine operating	2,510,865	2,262,920
Depreciation of mine plant and equipment	283,482	211,853
Administrative and general	365,203	295,599
General exploration	155,894	119,600
Oil and gas, including intangible drilling costs	371,420	245,709
	<u>3,686,864</u>	<u>3,135,681</u>
Income before income taxes	<u>2,637,392</u>	<u>2,183,575</u>
Honduras and United States income taxes	955,000	730,000
NET INCOME	<u>\$1,682,392</u>	<u>\$1,453,575</u>

See notes to financial statements.

Net income per share	\$ 1.57	\$ 1.35
Cash dividends paid per share . . . . .	.85	.70½
Stock dividends	3%	4%

NEW YORK AND HONDURAS ROSARIO MINING COMPANY

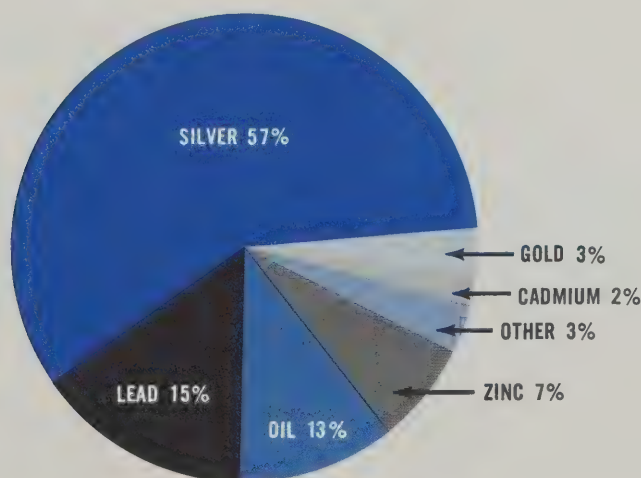
and Subsidiaries

STATEMENT OF CONSOLIDATED RETAINED EARNINGS

	Year ended December 31	
	1964	1963
Balance at beginning of year	\$2,960,558	\$2,945,324
Net income for the year	1,682,392	1,453,575
Excess of cost over par value of treasury stock sold under the stock option plan	20,292	24,332
Adjustment of mining property, plant, and equipment to tax basis, less prior years' income taxes and interest	—	35,355
	<u>4,663,242</u>	<u>4,458,586</u>
Less dividends declared:		
Cash dividends—1964, \$.85 per share; 1963, \$.70½ per share . .	883,667	730,052
Stock dividends—1964, 3%; 1963, 4%—at market at date of declaration	755,338	767,976
	<u>1,639,005</u>	<u>1,498,028</u>
Balance at end of year	<u>\$3,024,237</u>	<u>\$2,960,558</u>

See notes to financial statements.

SOURCE OF REVENUE



NEW YORK AND HONDURAS ROSARIO MINING COMPANY

and Subsidiaries

CONSOLIDATED STATEMENT OF SOURCE AND DISPOSITION OF FUNDS

Working capital at January 1, 1964		\$3,419,510
Funds were provided by:		
Operations:		
Net income for the year	\$1,682,392	
Depreciation, depletion, and other non-cash charges	378,489	
Total funds from operations	2,060,881	
Sale of treasury stock under stock option plan	57,766	2,118,647
		<u>5,538,157</u>
Funds were used for:		
Capital programs:		
Mochito mine plant and equipment	708,868	
Oil and gas ventures	267,348	
Other mining ventures	226,455	
Other property and equipment	28,929	
	1,231,600	
Increase in investments and other assets	108,074	
Cash paid in lieu of fractional shares	22,650	
Cash dividends paid	883,667	2,245,991
Working capital at December 31, 1964		<u>\$3,292,166</u>

NOTES TO FINANCIAL STATEMENTS

December 31, 1964

Note A—Stock Options

At December 31, 1964, officers and employees of the Company held options to purchase 11,913 shares of capital stock at prices ranging between \$11.07 and \$22.09 per share, representing 100% of the market price at date of grant, and aggregating \$159,113. During 1964, options for 1,157 shares were granted at prices ranging between \$19.05 and \$22.09, aggregating \$22,987, and options were exercised for 5,132 shares for a total of \$57,766. The aggregate quoted market price on the dates the options were exercised amounted to \$126,035. All options granted will expire on or before December 11, 1967. The number of shares of capital stock reserved at December 31, 1964, for options was 13,060 shares, comprising 11,000 shares in treasury and 2,060 shares unissued capital stock authorized during the year. The infor-

mation set forth with respect to prices per share and number of shares has been adjusted to reflect stock-split and stock dividends.

Note B—Capital Surplus

Balance at January 1, 1964	\$2,295,430
Excess of market over par value of capital stock issued January 22, 1965, as a 3% stock dividend	702,348
Excess of proceeds over cost of treasury stock sold under the stock option plan	32,343
Balance at December 31, 1964	<u>\$3,030,121</u>

NEW YORK AND HONDURAS ROSARIO MINING COMPANY

and Subsidiaries

MARKETABLE SECURITIES

December 31, 1964

	<u>Principal Amount</u>	<u>Cost</u>	<u>Market</u>
GOVERNMENT SECURITIES			
United States Government Treasury Notes, 1½%, due April 1, 1965	\$307,000	\$311,140	\$305,081
Honduras Government Bonds, 6%, payable on demand . .	250,000	250,000	250,000
New York City Bonds, 2.50%, due January 15, 1968 . . .	50,000	50,000	49,000
Accrued interest on notes and bonds		6,753	6,753
Total government securities		617,893	610,834
	<u>Number of Shares</u>		
CORPORATION STOCKS			
Campbell Chibougamau Mines Ltd.	100,000	147,140	381,250
Carolina Power and Light Company	1,000	7,115	42,375
Iowa Southern Utilities Company	500	4,390	15,625
Matthiessen & Hegeler Zinc Company	2,338	53,239	54,832
Shell Oil Company	300	6,936	17,850
Socony Mobil Oil Company, Inc.	400	6,038	36,700
Standard Oil Company of California	561	3,628	41,163
Standard Oil Company (New Jersey)	500	4,953	45,063
Total corporation stocks		233,439	634,858
TOTAL MARKETABLE SECURITIES		<u>\$851,332</u>	<u>\$1,245,692</u>

ACCOUNTANTS' REPORT

To the Stockholders

NEW YORK AND HONDURAS ROSARIO MINING COMPANY

New York, N. Y.

We have examined the consolidated financial statements of New York and Honduras Rosario Mining Company and subsidiaries for the year ended December 31, 1964. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures at the New York and mine offices as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statements of income and retained earnings present fairly the consolidated financial position of New York and Honduras Rosario Mining Company and subsidiaries at December 31, 1964, and the consolidated results of their operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. It is also our opinion that the accompanying statement of source and disposition of funds presents fairly the information shown therein.

ERNST & ERNST

New York, N. Y.

March 15, 1965

REPORT OF OPERATIONS

EL MOCHITO MINE, HONDURAS

February 8, 1965

The following report covers the operations of El Mochito Mine in Honduras for the fiscal year ending December 31, 1964.

GENERAL

There were no major interruptions in operations after the completion of the Cañaveral hydro-electric plant in April. Record tonnages of ore were mined and processed.

Production capacity was increased. Operations were made more efficient by installing a skip hoisting system in Shaft No. 3, adding the fourth ball mill in the concentrator, purchasing electric power for the operations from the new Government hydro-electric plant at Cañaveral, and establishing radio communications between San Pedro Sula and the mine.

The mill processed 137,829 tons of ore, containing 24.8 ounces of silver per ton, 0.028 ounces of gold per ton, 6.2 per cent lead, and 7.1 per cent zinc.

Metallurgical results were improved by finer grinding of ores and by more efficient washing in the cyanide circuit.

Milling costs were reduced. Total unit operating costs increased slightly due to higher costs of materials and supplies, increased labor costs, and a substantial increase in development work.

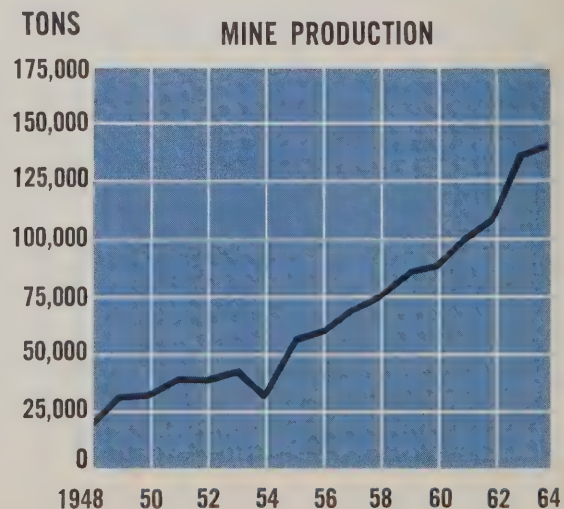
The Honduran Government enacted various tax reforms, including increased income taxes and an export tax on the silver contained in flotation concentrates.

Relations with our employees were good, and a new Collective Labor Contract for three years was negotiated.

The Government-owned electric power company began supplying electric power to our operations on April 3, 1964, from their new hydro-electric plant at Cañaveral. Our diesel-electric plant at Mochito is maintained on a standby basis for use in case of emergency.



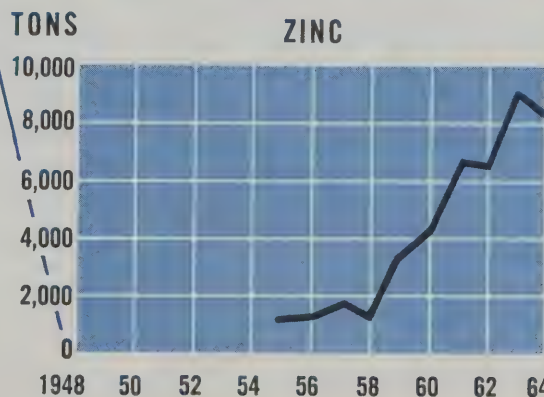
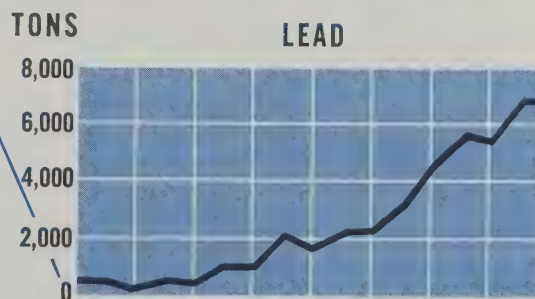
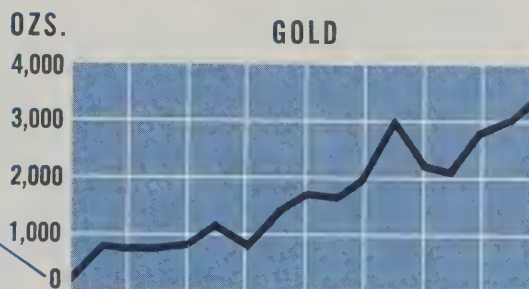
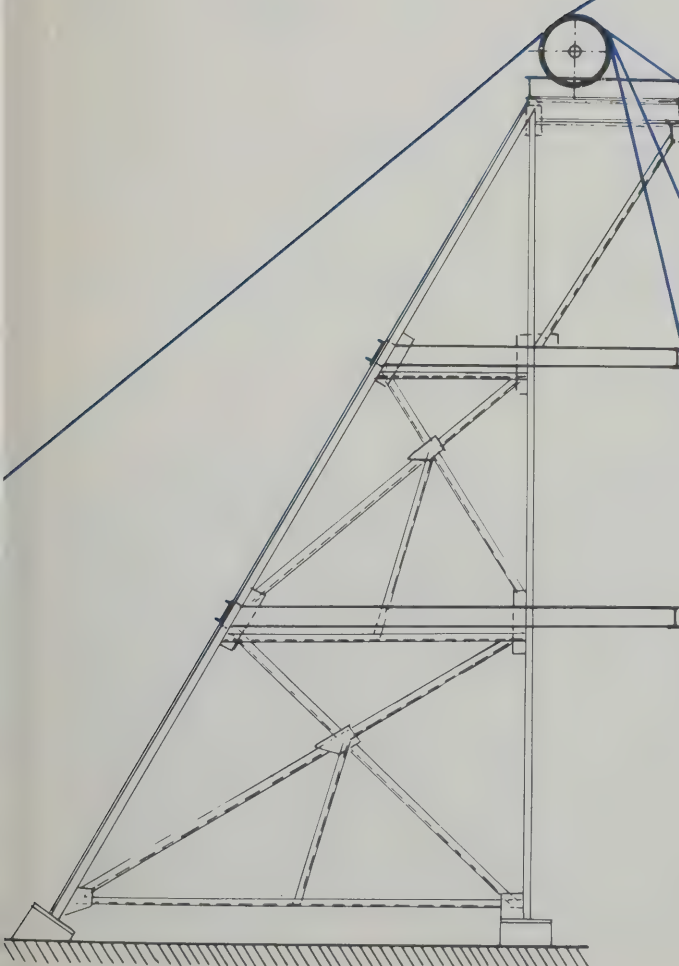
Mine Superintendent E. Tokarek, Planning Manager H. Emdin, and Vice President Mining W. P. Morris



EL MOCHITO MINE

PRODUCTION RECORD 1948-1964

Silver, Gold, Lead, Zinc



ORE RESERVES

Assured and probable ore reserves on December 31, 1964, were 1,015,289 tons, containing 19,539,249 ounces of silver, 20,946 ounces of gold, 80,549 tons of lead, and 79,326 tons of zinc.

Average assays of the total reserves are 19.2 ounces of silver per ton, 0.021 ounces of gold per ton, 7.93 per cent lead, and 7.81 per cent zinc.

COMPARATIVE SUMMARY—ORE RESERVES

		Average Grade				Total Ounces	
		Ag Ozs./Ton	Au Ozs./Ton	% Lead	% Zinc	Ag	Au
ASSURED:	Tons						
December 31, 1964	408,578	22.7	0.026	8.26	8.54	9,287,539	10,725
December 31, 1963	386,425	26.0	0.031	8.07	8.64	10,027,997	12,073
Increase (Decrease)	22,153	(3.3)	(0.005)	0.19	(0.10)	(740,458)	(1,348)
PROBABLE:							
December 31, 1964	606,711	16.9	0.017	7.71	7.34	10,251,710	10,221
December 31, 1963	632,146	17.4	0.018	7.47	7.26	10,980,245	11,186
Increase (Decrease)	(25,435)	(0.5)	(0.001)	0.24	0.08	(728,535)	(965)
GRAND TOTAL:							
December 31, 1964	1,015,289	19.2	0.021	7.93	7.81	19,539,249	20,946
December 31, 1963	1,018,571	20.6	0.023	7.71	7.78	21,008,242	23,259
Increase (Decrease)	(3,282)	(1.4)	(0.002)	0.22	0.03	(1,468,993)	(2,313)

MINE PRODUCTION

The mine produced 129,865 tons of ore from stoping and 8,695 tons of ore from exploration and development. Total production was 138,560 tons.

EXPLORATION AND DEVELOPMENT

Exploration and development work was substantially increased to provide for planned future increased production.

Planning Manager H. Emdin, Chairman S. R. Milbank, Vice President Mining W. P. Morris, Vice President Engineering H. S. Anderson, and Mine Superintendent E. Tokarek

Partial View of Mill



Comparison of Linear Advances in feet and slabbing in cubic feet:

<u>Year</u>	<u>Drifts and Crosscuts</u>	<u>Raises, Shafts and Winzes</u>	<u>Total Linear Feet</u>	<u>Slabbing Cu. Ft.</u>	<u>Diamond Drilling Ft.</u>	<u>Long Hole Percussion Drilling Ft.</u>
1964	12,180	6,685	18,865	107,400	28,635	103,008
1963	9,871	3,629	13,500	99,075	32,612	42,315
Increase (Decrease)	2,309	3,056	5,365	8,325	(3,977)	60,693

Surface

Anomalies were surveyed, mapped, and explored with diamond drill holes. The Palmar crosscut was advanced 80 feet towards the drill site.

525 Level

Exploration and development advances in the Porvenir No. 3 ore body increased ore reserves. Crosscuts 7990, 7995, and 9843 were advanced to ore showings previously cut in long percussion drill holes. Raise 7871 was advanced from Crosscut 9843 on ore to the 400 level. The lateral extent of ore cut in this raise has not been determined.

Systematic drilling of long exploration holes on both sides of Crosscuts 9230, 9305, 8345, and 8407 disclosed that no ore bodies had been bypassed.

650 Level

Work in the Nispero marginal ore body was directed towards delimiting the ore body on this level and locating the upper and lower extensions. Crosscut 7110 was advanced 137 feet on the mineralized contact between the shales and limestone. Raises 7221 and 6363 were advanced through the ore body into barren limestone and were used as drilling stations for long holes. Crosscut 7920 was advanced 399 feet to the west under Surface Prospect 22, and this area was explored with Diamond Drill Holes 1058, 1062, and 1067. Low silver values were found in the lime beds in the shales. Exploration of this area is being continued.

Sixty-six feet of ore was cut in Winze 7595, 30 feet below this level in the Yojoa ore body. Additional exploration work is planned to investigate limestone-shale contact on this level and also from Crosscut 8320 on the 850 level.

North of the Raíces Tunnel, Crosscut 0737 was reconditioned and advanced 971 feet towards an area beneath known surface anomalies which we intend to explore. Two oxide ore showings that were cut in the advance are being explored.

The Caliche area of the Raíces Tunnel is being explored. No ore in commercial quantities has been encountered to date.

775 Level

The El Salvador area is being explored from Shaft No. 5. Crosscut 12410 was advanced 12 feet in barren limestone towards a known ore structure.

850 Level

The Porvenir ore bodies No. 1 and No. 2 are extensive on this level. Seventy feet of sulphide ore was cut in Crosscut 8319 near Raise 8255. Raises and sublevels were driven in ore above this level. Ore was cut in Crosscut 8215. Raise 8175 from Crosscut 8215 is being advanced in ore.

Crosscut 8320 was advanced 531 feet in a westerly direction to explore the shale-limestone contact and the extension of the Yojoa ore body. In the advance small isolated pockets of sulphide mineralization were encountered in limey shales.

900 Level

In the El Salvador area Crosscut 12412 was advanced 134 feet to a known mineralized structure, and Crosscuts 12370 and 12380 were advanced north and south respectively on this structure. Mineralization encountered to date has been low grade, but Raise 12395 is now being advanced to explore higher grade ore previously cut in Diamond Drill Hole 560.

975 Level

Development and exploration of the Porvenir No. 1 ore body is in process. Diamond drill holes drilled from Crosscuts 8450 and 8310 failed to cut the downward extension of the ore body, but Hole 1033 cut 17 feet of low grade ore.

An extension of the San Jorge ore body to the west along an igneous dike was explored with an advance of 116 feet in Crosscut 9819. Silver values of ore grade were cut in numerous spots on the contact of the igneous dike with limestone, but the values of lead and zinc were low. Raise 9365 was advanced in good grade ore to the 850 level. Ore is being developed on both sides of this raise.

1100 Level

The Main, Nueva, Concepción, and San Jorge ore bodies are being developed and mined above this level. The Nueva ore body was traced to the south in Crosscut 0026. Long percussion drill holes were drilled to assist in defining the ore bodies on this level, and downward extensions of the ore bodies were traced with diamond drill holes.

1225 Level

The Main ore body has been located east of Crosscut 0050 and will now be developed.

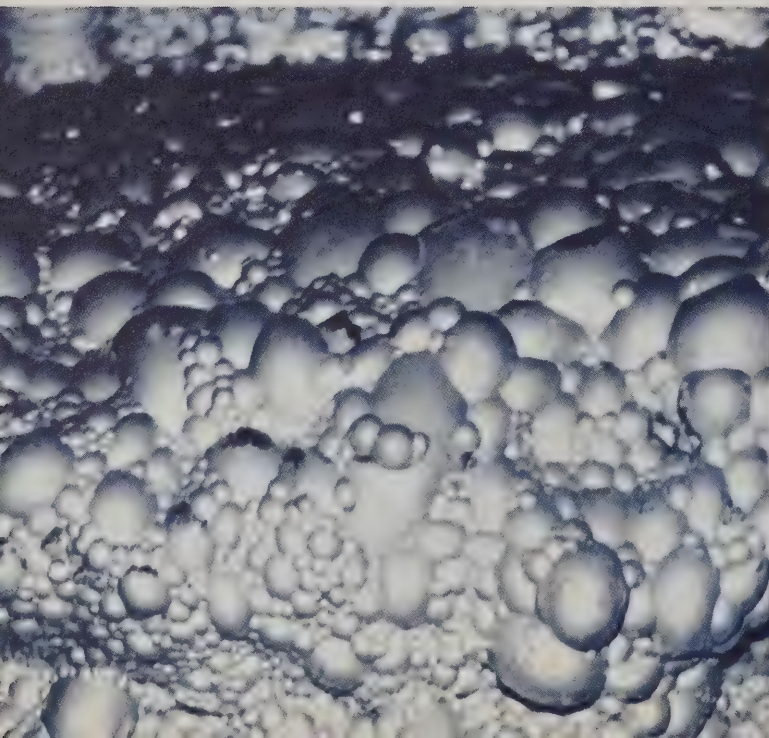
The San Jorge ore body has been located and is being developed.

The Concepción and Nueva ore bodies have been defined by advances in Crosscuts 9440, 0040, 0048, and 0025 and by diamond drill holes drilled from these crosscuts.

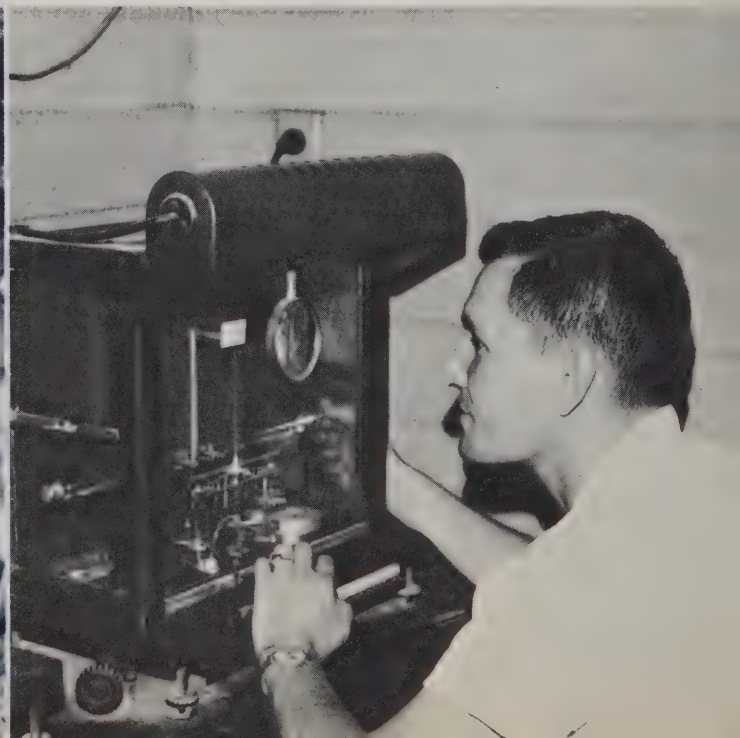
Diamond Drill Hole 1039, drilled from Crosscut 0045, cut two bands of ore on the northern footwall contact of igneous dike with limestone.

Crosscut 0025 advanced south through the mineralized igneous dike into barren limestone.

Froth Flotation



Assaying—Carlos Janser



1350 Level

The pump station and battery charging station near Shaft No. 3 were completed. Shaft No. 3 was sunk 130 feet to the 1490 level, and a skip loading station was installed at the 1425 level.

The raises for the orepass, wastepass, waterpass, and general manway were completed.

The Main, San Jorge, Nueva, and Concepción ore bodies, located east of Shaft No. 3, are being defined and developed. Haulage Crosscut 9444 E was advanced 692 feet towards the Concepción and Nueva ore bodies. Crosscuts 9872 and 9970 were advanced from Crosscut 9444 E in a southerly direction, 110 and 173 feet respectively. Haulage Crosscut 9780 was advanced from Crosscut 9444 E to the north 152 feet towards the Main ore body and Shaft No. 2.

1475 Level

The Shaft No. 3 station is being slabbed out.

DIAMOND DRILLING

Exploration with diamond drill holes is an important part of our program. Five drills were operated to complete our drilling program of 28,635 linear feet.

PERCUSSION DRILLING

Our long hole percussion drilling program was increased to 103,008 linear feet. Last year we drilled 42,315 linear feet.

We continued our procedure of exploring along both sides of principal crosscuts with long holes (200 feet) to determine if ore bodies had been bypassed.

MINE GENERAL

A new record tonnage was achieved of 138,560 tons of ore produced. Linear advances for exploration and development were increased 40 per cent more than advances of the previous year.

Shafts Nos. 2 and 3 operated normally throughout the year, but Shaft No. 5 did not resume operations until permanent water pumps were installed on the 900 level in August.

Diamond Drilling



1350 Pump Station



Shaft No. 3 was sunk 130 feet to the 1490 horizon. The ore and wastepass system and the skip loading station (1475 level) were completed and placed in operation in November.

Granby type cars (40 cubic foot capacity) and a larger trolley locomotive were placed in operation on the Zero level to increase the capacity of the ore and waste haulage.

The pumping station on the 1350 level was completed and placed in operation. Pumping units installed in this station are interchangeable with the pumping units in our pumping station on the 975 level. Pumping capacity is 6,090 gallons per minute.

The haulage crosscut to Shaft No. 2 from Shaft No. 3 on the 1225 level was completed, but the Shaft No. 2 pilot raise from the 1225 level to the 1100 level was not yet completed.

MILL GENERAL

A record tonnage of ore was processed at a lower unit cost.

Recoveries of silver, gold, and lead were 2.20, 1.57, and 0.98 per cent higher respectively, and recovery of zinc was 2.05 per cent lower.

The capacity of the plant was reduced during the first quarter due to a shortage of electric power, but sufficient electric power was available after the Government plant began operating in April.

Metallurgical testing continued, and operating results were improved by grinding the ores finer and by washing the ores more efficiently in the countercurrent decantation section of the cyanide circuit.

The plant operated a greater percentage of available time providing increased tonnage. The treatment rate per operating day was 37 tons less due to utilization of the regrind circuit.

Cyanide consumption was reduced by improved filtration of feed to agitators and by the more efficient discharge of the cyanide circuit.

Another 6' x 5' Ball Mill was added to the concentrator in December.

A comparison of the mineral content in the ores treated and the over-all per cent recovery for the years 1964 and 1963 is as follows:

<u>Metal</u>	<u>Year 1964</u>		<u>Year 1963</u>	
	<u>Assay</u>	<u>% Recovery</u>	<u>Assay</u>	<u>% Recovery</u>
Silver	24.785 ozs./ton	90.57	25.591 ozs./ton	88.37
Gold	0.0277 ozs./ton	89.08	0.0269 ozs./ton	87.51
Lead	6.17%	85.00	6.67%	84.02
Zinc	7.09%	87.54	7.80%	89.59

CONCENTRATE AND BULLION PRODUCTION

	<u>Silver Ozs.</u>	<u>Gold Ozs.</u>	<u>Lead Tons</u>	<u>Zinc Tons</u>
Lead Concentrate	2,050,655	2,041	6,737	1,534
Zinc Concentrate	594,675	680	495	7,022
Bullion	448,612	680		
Total	3,093,942	3,401	7,232	8,556

TONS OF ORE PROCESSED THROUGH DECEMBER 31, 1964

<u>Years 1948/1963</u>	<u>Year 1964</u>	<u>Total</u>
1,026,161	137,829	1,163,990

PRODUCTION OF SILVER, GOLD, LEAD, AND ZINC THROUGH DECEMBER 31, 1964

	<u>Years 1948/1963</u>	<u>Year 1964</u>	<u>Total</u>
Ounces of Silver	30,707,645	3,093,942	33,801,587
Ounces of Gold	26,395	3,401	29,796
Tons of Lead	42,194	7,232	49,426
Tons of Zinc	26,664	8,556	35,220

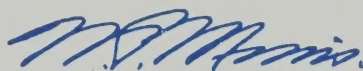
CONSTRUCTION

Major construction and installation projects completed include: additions to schools for the children of workmen; cooling tower at the diesel plant; two Caterpillar diesel-electric generators (D-398) of 500 KW capacity each; new mine compressor; addition to the domestic water supply system in the mine camp; four new houses for staff employees; direct current distribution center at the diesel plant; three additional pachuca tanks; disc filter for filtering zinc concentrates; skip hoisting system; extension to the change house; 6' x 5' ball mill; transformer station at concentrator; extension to lamp room at mine; and additions to lighting and sanitary services in the workmen's camps.

OFFICERS, DIRECTORS, AND STAFF

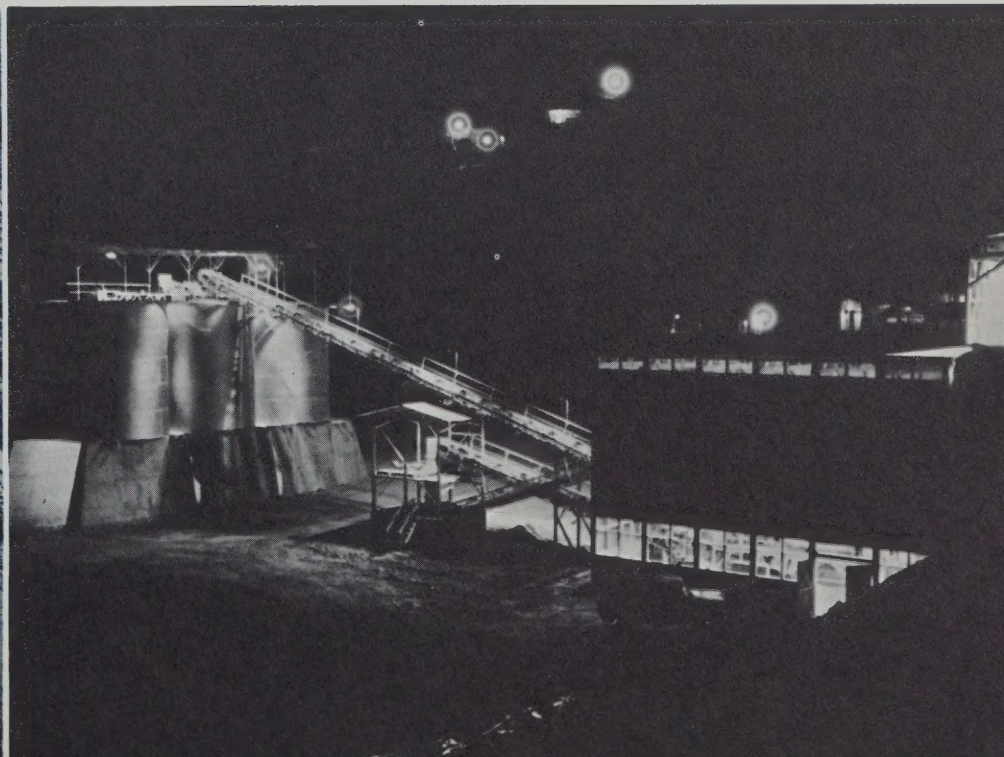
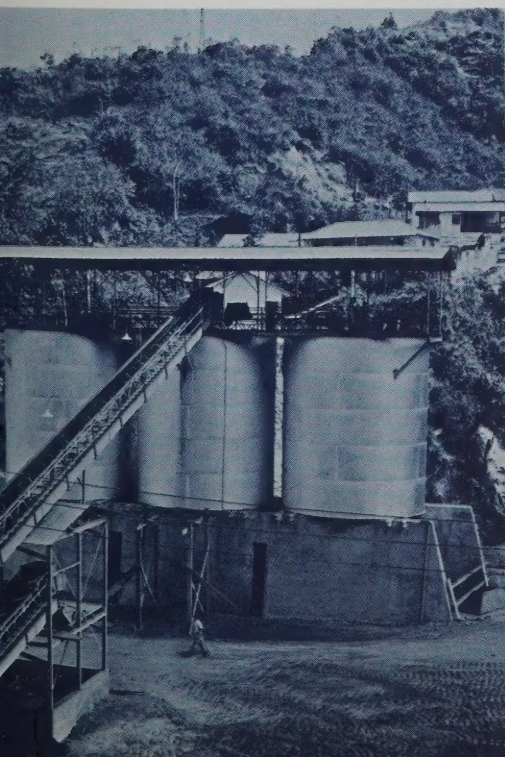
I wish to thank the Officers, Board of Directors, and the New York Office Staff for their assistance, and to express my appreciation to members of my staff for their loyalty and cooperation.

Respectfully submitted,



W. P. MORRIS
Vice President, Mining
and General Manager

Views of New Crushing Plant



EL MOCHITO MINE

OPERATING STATISTICS

Years Ending December 31, 1964 and December 31, 1963

	<u>1964</u>	<u>1963</u>	<u>Increase (Decrease)</u>
Number of employees	845	815	30
Tons of ore mined	138,560	129,937	8,623
Tons of ore milled	137,829	130,526	7,303
Average tons milled per day (365)	378	358	20
Average grade of ore delivered to the mill per ton			
Ounces of silver	24.8	25.6	(.8)
Ounces of gold . . . . .	.028	.027	.001
Per cent lead	6.2	6.7	(.5)
Per cent zinc	7.1	7.8	(.7)
Total metal production			
Ounces of silver	3,093,942	2,951,949	141,993
Ounces of gold	3,401	3,070	331
Pounds of lead	14,464,000	14,620,000	(156,000)
Pounds of zinc	17,112,000	18,238,000	(1,126,000)
Pounds of cadmium	220,700	181,800	38,900
Mill recovery			
Silver	90.6%	88.4%	2.2
Gold	89.1	87.5	1.6
Lead	85.0	84.0	1.0
Zinc	87.5	89.6	(2.1)
Average market price per			
Ounce of silver	\$ 1.293	\$ 1.288	\$.005
Ounce of gold	35.00	35.00	
Pound of lead . . . . .	.145	.119	.026
Pound of zinc . . . . .	.140	.124	.016
Pound of cadmium	2.88	2.49	.39

